largely done by the entering missile. Entering the middle fossa by this route, you are well under the temporosphenoidal lobe, drainage is at the best possible point and the brain has not to be subjected to the additional traumatism.

In conclusion I wish to emphasize that in all gunshot wounds of the ear where operation is indicated, the one of selection should be by the radical ear operation.

Discussion.

Dr. Robert Miller, Los Angeles: I am sorry I did not hear all of Dr. Welty's paper. Some years ago I saw, in consultation, a man about thirty-five years of age, who, several days previously, shot himself with suicidal intent. The weapon used was a cheap one of 44-calibre. Upon calling later at the police station, I learned that a "short" cartridge had been used. The missile had entered the external auditory meatus on the right side. The wound was full of pus, and paralysis of the right side of the face was complete. The pulse was about eighty, and very feeble, and patient very pale and weak. He declined operative interference. I saw him but once. Contrary to expectations, he recovered sufficiently to stand trial for attempting to murder two women, whose hands he had vainly sought in marriage, the attempt upon their lives having been made immediately prior to that upon his own.

He was convicted and sentenced to the penitentiary for two years. I very much regret not having sufficient data to be able to make a more complete report of this case. The chief point of interest is that with such a wound, a partial recovery was possible.

REPORT OF AN UNUSUAL CASE OF LABYRINTHINE DEAFNESS.*

By G. P. WINTERMUTE, M. D., San Francisco.

Name, Mrs. M. W. Nativity, U. S. A. Age, 42. occupation, housewife. Referred from the Medical Clinic with the following history:

Family History: Mother died at 61 years of heart trouble; had always been very nervous; eyes had been operated on leaving her blind. Father died at 71 years, pneumonia. One sister alive and well, no brothers. Some relatives died of T. B.

Present History: Childhood. Patient had measles, whooping cough, chicken pox, no jaundice, rheumatic fever (?)—in general a strong child. Later life. No jaundice, malaria in Stockton 20 years ago, did not have a doctor, questionable. Eyes, negative. Nose, catarrh intermittent beginning about 18 years. Ears, about 15 years ago had an abscess in left ear, treated by a doctor. That went away and since then to present time has had no trouble with ears, except after dizzy spells, which left a numb feeling for a few minutes.

Head: Dizzy spells started at about 14 years, came at irregular intervals—sometimes four a week, and sometimes only one in several weeks. Spells may come when walking, sitting or even in the middle of the night. There is a feeling of closeness, a rushing of blood to the head, together with a vomiting, without a feeling of sickness; dizziness. As soon as gas is brought up and patient walks about a little, there is relief—attack lasts about five minutes—very weak after attack.

Throat: At time of abscess in ear, patient had a (quinzy) sore throat. Respiratory system, negative. Circulatory system: At time of attacks patient describes a darkening about lower part of face; no piles; no palpitations. Digestive system: No constipation; at time of spells there seems to be a retching of stomach bringing up gas and sometimes stomach contents brought up; no feeling of sickness. Has had a hernia and has been operated on; possibly a ruptured appendix with much pus. Urinary system: Negative; urine gets dark at times. Menstrual history: Started at 14 years, normal. Dizzy spells apt to come either just before or after period.

Married Life: Had a child at 24 years; child well; patient well since. Married at 35 years; no miscarriages; husband alive and well; has two boys alive and well. Has had considerable nerve strain and general worry. Does not drink ale.

At 14 years of age patient started to have certain attacks which seemed to come either just before, during, or immediately after menstrual period. The attack is characterized by a feeling of light-headedness, which is associated with a buzzing or swishing in ears. Patient becomes very faint but does not become unconscious; she becomes dark in the lower part of the face; she seems to see things double with both eyes and after extreme retching of stomach—which is not associated with any pain—much gas is emitted, and after that and walking a little, patient feels immediate relief. After attack patient is left quite weak and the attack lasts only about five minutes.

Lately the patient has noticed that about an hour or so after an emotional strain, attack is apt to come on. Onset is always sudden and without apparent cause, though sometimes a quick movement or strained and sustained position seems to be a predisposing cause. (See note in ear, nose and throat history.)

September 23rd, at 10:30, while writing a letter—had been under emotional strain for several weeks and culminating point associated with writing of letter—typical attack set in, this time associated with vomiting due to retching without any feeling of sickness. Patient had eaten an unusualy hearty supper. For three days the vomiting continued at intervals and dizziness also remained. Patient remained in bed four days; no fever; lips dry; tongue coated white; took citrate of magnesia. Patient too weak to get up. A deafness of right ear (partial) has remained until present time; now patient cannot walk straight and has a kind of fullness at base of brain and a feeling of constriction about entire head; no pain; no soreness of eyeballs.

Present Examination (Dickson). Patient well developed, fairly well nourished. Face flushed and cyanotic. Pulse 80, regular. Temp. 98° (9:30 a. m.). Pupils equal, react readily, fields (rough test) apparently not restricted, evident moderate anemia (sclerae pearly white). Eye movements O. K. Tongue large, coated. Teeth well kept, pharynx congested. No enlargement, thyroid or cervical lymph nodes. Chest movements equal, not very wide excursion. Vocal fremitus greater on right side. Percussion shows no impairment. Auscultation shows harsh breath sounds with few moist rales over both apices after coughing, and over both bases behind.

Heart not enlarged. Sounds at apex show definite presystolic murmur, with sharp first sound, also slight systolic at aorta transmitted to the neck; occasional premature contraction noted. Liver not enlarged or tender. Spleen not felt. Abdomen loose, scars of old operation, wound in median line; and drainage puncture wound below umbilicus, and behind, on left side. Marked tenderness on pressure over McBurney's point. No other tender foci found.

Legs and ankles slightly swollen. Knee kicks, active and equal. Patient not examined as to neurological condition. Evident diagnosis is mitral stenosis, slight decompensation. Given infusion digitalis, drachm 1—three times a day. To keep as quiet as possible.

October 7. Patient returned. Still has sensation in head. Vision is still disturbed, when first goes into the light. Has not been coughing or short of

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

breath. Complains of cold feet, especially at night. Is irritable. Unable to keep up with conversation. Pulse 80, regular when sitting. Renew prescription. Give double amount. Give pil Rheii Co., one at night.

October 8. Admitted to Lane Hospital.

Status (Lovell Langstroth). Well developed, well nourished woman, lies comfortably in bed. Eyes, pupils equal and react to light and accommodation, fields and movements normal. Ears, does not hear watch on right, no discharge.

Chest, broad, deep, well arched and clothed. Expansion good and equal on both sides. No dulness. R. normal. Prolonged expiration at right apex, breath sounds otherwise normal, no rales, apices of good width, bases move freely.

Heart, P. M. T. palpable but not visible in fifth interspace, nine and one-half cm from midline. Apex in fifth interspace, ten and one-half cm from midline; upper border at third rib; right border four and one-half cm to right of midline. Heart very slightly enlarged, just palpable thrill at apex, where a well defined presystolic rumble is heard, followed by a snapping first sound. Sounds: clear pulmonic, second accentuated. Rhythm regular, rate moderate, radial pulse full—artery not palpable—tension normal.

Liver, dulness begins at sixth rib and extends to costal margin in nipple line. Spleen, not palpable.

Abdomen, rounded and slightly protuberant, but symmetrical; walls fat and toneless; laparotomy scar at umbilicus in midline. Scar from drainage tube in right lower quadrant, another above the left and superior spine; no spasm; slight tenderness in right lower quadrant above pubes, no masses. Right kidney floating and easily palpable.

Extremities, considerable thickening and roughening of periosteum over inner surface of both tibiae; no edema, varicose veins or scars. Considerable purplish marbling of skin of both arms—many dilated venules on both legs and thighs.

Reflexes, patellar jerks, hyperactive but equal.

Impression, mitral stenosis (Lovell Langstroth). (Lues?)

October 13, 1913. Note by Dr. Cheney. Physical signs indicate definitely the presence of a mitral stenosis; but this lesion is well compensated and does not seem adequate as an explanation for her attacks. In the absence of a Wassermann reaction it appears that these attacks are functional, resembling petit mal.

October 15. Dr. Schaller suggests Menieres disease as an explanation for deafness coming on suddenly and dizziness. To have eyes examined to explain diplopia. To have ears re-examined and written reports made.

October 16. Eyes: Vis. R. & L. equals 20-15. Fundi normal.

Examination of Ear Clinic. Patient states she was taken ill, with dizziness and vomiting ten days ago. Dizziness, from her description, was not exactly of the labyrinthine type. Since this attack she has been hard of hearing with tinnitus at times. Patient states that she is subject to attacks, and that during them she always becomes deaf, sometimes in one ear and sometimes in the other, but only lasting, before this last attack, a few minutes. The attacks are also characterized by a feeling of numbness in the ears.

R. Ear.	L. Ear.
	Weber—towards L.
Positive	—Rinne.
14" Short	—Schwabach.
Negative	—C.
Negative	—A.
Negative	—C4.
5 feet	—Voice.
2 feet	—Whisper.
Negative	—Watch.

Positive—Caloric positive, no dauern, nystagmus. T. L. 14"—Turning—T. L. 18".

Pointing tests all normal.

Sways to R. in Romberg; sways to R. in walking with both eyes closed—the swaying in both walk and Romberg is not constant in repeated tests. Knee jerks normal; unsteady in balancing on one foot. Spontaneous nystagmus on looking to extreme right and left. Patient states that quick movements of the head make her slightly dizzy. Tactile sensation over the distribution of 5th nerve good.

The discrepancy in Romberg and walking tests suggest a functional element present. She was carefully tested for malingering by reading with the noise apparatus, and by the use of two small "a" forks—tests showed she was not malingering.

Patient returned a few days later and apparently her hearing had improved—the voice distance increasing to twenty feet.

Referred neurological.

October 18. Dr. Schaller. As patient does not lose consciousness during attacks, petit mal seems improbable. In the absence of any demonstrable lesion of the labyrinth, Menieres disease seems equally improbable. From the neurological examination, no evidence of organic nervous disease can be elicited, with the exception of possible nerve deafness (?) which seems variable. Our impression, therefore, of the condition, if it be not accounted for by circulatory changes dependent on the heart condition, is a nervous, functional one, perhaps related to migrane, which it somewhat resembles, the principal and characteristic symptom, however, of headache, being absent.

October 20. Is it not characteristic of petit mal that unconsciousness does not accompany the attack? M. P. C.

October 21. Dismissed. Diagnosis. Mitral stenosis. Migrane.

October 27. Further ear examination: Walking with eyes closed has a tendency to fall to left. No headache, no pain on pressure. Tinnitus synchronous with pulse. No spontaneous pointing error. Normal pointing error after turning with palms downward. Hearing four yards. No nystagmus (spontaneous).

It is unlikely that this is a case of Barany's syndrome. Epilepsy is improbable on account of the length of time of attacks (four days or more). Mixed treatment.

October 28. Further ear examination: In testing the hearing, it was discovered that the patient was not holding her good ear tightly closed. On correction, hearing proved the same as in the first examination. The apparent improvement which had been previously noted was undoubtedly due to this error.

Further examination in March, 1914. Hearing tests all gave the same status as at the first examination. Irrigation with Ruttin's double sided caloric apparatus gave no nystagmus after four minutes' irrigation, showing that both vestibules were equally irritable.

Comment: We have here a patient subject to periodical attacks similar, at least, to petit mal; and characterized from the ear standpoint, by temporary deafness and tinnitus during the attack. It might be regarded as a functional disturbance of the hearing centers, had not one attack finally left the patient with a permanent nerve deafness in one ear.

The patient has a heart lesion, and the one attack which produced the damage, might be accounted for by a small embolus lodging in one of the branches of the arterial plexus which supplies the membranous cochlea, producing a permanent damage to the end organ. The theory of embolus, however, seems inadequate to cover the repeated attacks with temporary deafness and tinnitus. It would be a great coincidence for a patient suffering from repeated functional disturbances of the ear centers, to have an embolus finally lodge in the blood supply of her inner ear. By the same

reasoning a hemorrhage into the cochlea seems equally improbable.

Barany's syndrome complex is characterized by attacks of dizziness, labyrinth symptoms, and an inner ear lesion. Headache on the affected side behind the ear is a constant symptom. The pointing tests show a deviation, and often pointing after turning shows a loss of deviation to the inside of the hand on the affected side. The vestibule on the affected side usually is less irritable, and the hearing is often variable.

This case has no headache, no pointing deviations, the hearing is not variable, and the vestibules are equally irritable. It consequently does not fall within the group of cases which Barany has described as due to increased pressure of fluid in the posterior fossa.

In the December 1913 issue of the Archiv fur Ohren heilkunde, a report of the Deutcher Naturforscher und Arzte in Vienna quotes Beck as reporting a case of eighth nerve palalysis in multiple sclerosis, and Gemperz reports a case of multiple sclerosis in which the first symptoms were peculiar, recurring apoplectiform labyrinthine symptoms affecting one ear only. The report of these cases was so brief that it was impossible to determine whether they were similar to this case. The Neurological Clinic was unable to find any lesion in the central nervous system—possibly something may develop later.

In such a search as I have been able to make I can find no similar case, and I report it without attempting any explanation.

Discussion.

Dr. Cullen F. Welty: All I can say for this case report is that the case is worked up remarkably well. It shows how much can be done in arriving at something definite in regard to some of the ear lesions we frequently encounter. From the fact that nystagmus was not associated with the vertigo and dizziness, I am led to believe that the vertigo did not come from the internal ear but was due to an affection from which the patient suffered. I would account for the deafness by an infection of the cochlea from influenza, measles, mumps, or some one of the infectious diseases. To my notion this is more likely than the interpretation he puts upon it.

John J. Kyle, Los Angeles: Dr. Wintermute's report suggests to me the possibility that his case is one that might be classed as hysterical labyrinthitis. The fact that a nerve deafness exists, which is a real one, does not rule out the possibility that the periodical static changes are purely functional and hysterical in character. I have one case under observation, with a history of partial nerve deafness, suffering from periodical attacks of dizziness, and vomiting, upon sudden change of position, symptom complex of some vascular change in the semicircular canals, in which the symptoms of hysteria are positive. In this case there was a history of a fall and a blow on the head in the frontal region, in which there might have been a serious effusion into the labyrinth. Before the fall, however, sudden change of position would cause dizziness and sickness. Examination by a competent neurologist gave a negative finding, and X-ray examination shows no change in floor of skull.

Dr. Hill Hastings, Los Angeles: I reported at the last meeting of the State Society, several similar cases of so-called Meniere's disease, without any middle-ear changes. Similar cases were reported by Richard Lake in the British Medical Journal. The circulatory changes that likely do occur in the labyrinth are usually not susceptible of diagnosis.

Dr. Wintermute, in closing: Hysteria was first thought of, but the malingering tests showed actual deafness, and the last examination, five months afterwards, showing exactly the same status in the functional tests, led him to believe that it was not hysteria. He was acquainted with the cases reported by Dr. Hastings and Dr. Lake, but they did not seem to him to be of the same type.

BOOK REVIEWS

Electricity in Diseases of the Eye, Ear, Nose and Throat. With illustrations. By W. Franklin Coleman, M. D., M. R. C. S. Published by the Courier-Herald Press, Lincoln, Ill., 1912. Price $5.00.

This work for believers in electrical treatment of pathological conditions will no doubt be well received. It will be admitted by all scientific ear, nose and throat specialists that electricity, except in a few isolated instances, has no place in treatment. This volume would lead one to believe that it is a panacea for almost every ill. In this respect it is absolutely dangerous, for no sane man would use it as advised in chronic, purulent otitis media, glaucoma or cataract. To be brief, the book is a hodge-podge of non-scientific, unproven facts with a few grains of truth sprinkled in. The faddist will find plenty of pabulum in this work. H. Y. McN.

Bacteriology For Nurses. By Isabel McIsaac, R. N. Second Edition Revised. Pp. 176, with illustrations. New York. Macmillan Company, 1914. Price $1.25.

For both the student as well as the graduate nurse this book furnishes a comprehensive and instructive treatise on the subject of bacteriology. While it may be used in connection with instruction in the laboratory, yet, the subject is so treated that it may be readily used for reference purposes. The subjects treated cover the general field of bacteriology, giving an idea of the relations of bacteria to disease, the methods of examining and detecting their presence, as well as sterilization, disinfection and immunity. The tables and formulae are well selected; the illustrations when supplemented by work with the microscope suggest lines of further study. As a text book it would be of assistance to a nurse desiring to inform herself generally upon the subject of modern bacteriology. G. L. B.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M. D., Professor of Otology in the Medico-Chirurgical College, Philadelphia. Third edition, thoroughly revised. 12mo of 590 pages, 223 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $2.50 net.

The book impresses the reader as being concise, correct and sufficiently complete for the student or busy practitioner. There has been considerable elimination of non-essentials but the process has not been carried to the extent of omitting such obsolete methods as tonsil electrocautery, piecemeal tonsillotomy and through and through septum operations. The added chapter on formulas contains valuable hints on medical therapeutics and the subject of the accessory sinuses is given the increased prominence its importance demands. The section on the ear is especially worthy of praise. It contains numerous excellent and helpful engravings of dissections by the author, and is up-to-date with the latest advances in